

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit:

Confirm. No.: 5271

To Be Assigned

To Be Assigned

In re Application of:

Mylavarapu VENKATRAMESH et al.

Appln. No.: 10/647,517 Examiner:

Filed: August 26, 2003 Atty. Docket: 16518.132

For: Transgenic Plants Containing Altered
Levels of Sterol Compounds and

Tocopherols

INFORMATION DISCLOSURE STATEMENT

Mail Stop Missing Parts

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Dear Sir:

The attention of the Examiner is invited to the references listed on the attached Form PTO-1449. Copies of the listed references are either submitted herewith or were previously cited by or submitted to, the Office in a prior application. Pursuant to 37 C.F.R. § 1.98(d) and MPEP § 609, the prior application is identified by its U.S. Application Number in this Information Disclosure Statement on the attached Form PTO-1449, and the above-captioned application relies on the prior application for an earlier filing date under 35 U.S.C. § 120.

It is respectfully requested that the information above be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.



CERTIFICATION AND/OR FEE

Because this Information Disclosure Statement is being submitted prior to issuance of the first action on the merits of the above-captioned application, no certification or fee is required.

Respectfully submitted,

David R. Marsh (Reg. Attorney No. 4, 408)

Kristan L. Lansbery (Reg. Agent No. 53,183)

Date: January 16, 2004

ARNOLD & PORTER 555 Twelfth Street, N.W. Washington, D.C. 20004-1206 (202) 942-5000 telephone (202) 942-5999 facsimile JAN 1 6 2004

FORM PTO-1449

INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO.

16518.132

10/647,517

APPLICANTS

Mylavarapu VENKATRAMESH et al.

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				August 26, 2003	To Be Assi	gned		
				U.S. PATENT DOCUMENTS				
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME		REFERENCE PROVIDED*		
	AA1	4,588,717	5/1986	Mitchell		09/548,256		
	ABl	5,244,887	9/1993	Straub		09/548,256		
	AC1	5,270,041	12/1993	Eugster et al.		09/548,256		
	AD1	5,306,862	4/1994	Chappell et al.		09/548,256		
	AE1	5,365,017	11/1994	Chappell et al.		09/548,256		
	AF1	5,420,034	5/1995	Kridl et al.		09/548,256		
-	AG1	5,432,069	7/1995	Grüninger et al.		09/548,256		
	AH1	5,451,513	9/1995	Maliga et al.		09/548,256		
	AII	5,518,908	5/1996	Corbin et al.		09/548,256		
<u> </u>	AJ1	5,530,185	6/1996	Martineau et al.		09/548,256		
	AK1	5,530,191	6/1996	Maliga		Submitted herewith		
	AL1	5,554,369	9/1996	Corbin et al.		09/548,256		
	AM1	5,558,862	9/1996	Corbin et al.		09/548,256		
	AN1	5,576,198	11/1996	McBride et al.		09/548,256		
	AO1	5,589,619	12/1996	Chappell et al.		09/548,256		
	AP1	5,608,152	3/1997	Kridl et al.		09/548,256		
	AQ1	5,693,507	12/1997	Daniell et al.		09/548,256		
	AR1	5,753,475	5/1998	Houck		09/548,256		
	AS1	5,763,245	6/1998	Greenplate et al.		09/548,256		
	AT1	5,811,636	9/1998	Hanna et al.		09/548,256		
	AUl							
				FOREIGN PATENT DOCUMENTS				
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	REFERENCE PROVIDED*	TRANSLATION		
	AV1	0 255 378 A3	2/1988	Europe	09/548,256	Yes No		

AVI 0 233 376 A3 2/1966 Europe 09/348,256 No

AWI 0 706 320 B1 4/1996 Europe 09/548,256 Yes
No

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	REFERENCE PROVIDED*	TRANSLA	TION			
	AA2	0 839 458	5/1998	Europe	09/548,256		Yes No			
	AB2	1 033 405	9/2000	Europe	09/548,256		Yes No			
	AC2	90/05788	5/1990	PCT	09/548,256		Yes No			
	AD2	92/19640	11/1992	PCT	09/548,256		Yes No			
	AE2	93/16187	8/1993	PCT	09/548,256	Abstract	Yes No			
	AF2	95/01098	1/1995	PCT	09/548,256		Yes No			
	AG2	95/16783	6/1995	PCT	09/548,256		Yes No			
	АН2	95/24492	9/1995	PCT	09/548,256		Yes No			
	AI2	95/24493	9/1995	PCT	09/548,256		Yes			
	AJ2	96/38047	12/1996	PCT	09/548,256		Yes No			
	AK2	97/27285	07/1997	PCT	09/548,256		Yes No			
	AL2	97/39112	10/1997	PCT	09/548,256		Yes No			
,	AM2	97/42830	11/1997	PCT	09/548,256		Yes No			
	AN2	97/48793	12/1997	PCT	09/548,256		Yes No			
	AO2	98/06405	2/1998	PCT	09/548,256		Yes No			
	AP2	98/06714	2/1998	PCT	09/548,256		Yes No			
	AQ2	98/06862	2/1998	PCT	09/548,256		Yes No			
	AR2	98/17789	4/1998	PCT	09/548,256	Abstract	Yes			
	AS2	98/45457	10/1998	PCT	09/548,256		Yes			
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	AU2	99/07867	2/1999	PCT	09/548,256		Yes			
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	AA3		99/63096	12/1999	PCT	09/548,256		Yes No
	AB3		00/08190	2/2000	PCT	09/548,256		Ye: No
	AC3		00/10380	3/2000	PCT	09/548,256		Ye
	AD3		00/32757	6/2000	PCT	09/548,256		Ye No
	AE3		00/32791	6/2000	PCT	09/548,256		Ye
	AF3		01/04330	1/2001	PCT	09/548,256	Abstract	Ye
	AG3		-					Ye
	АН3							Ye No
	AI3	\top						Ye
				ОТ	HER (Including Author, Title, Date, Per	tinent Pages, etc.)	REFERI	No ENCE DED*
	AJ	3	Database E	ST Id.: 1030	5015, GenBank Accession No. AA	394495	09/548,2	56
	AK	3	Database E	ST Id.: 1456	5547, GenBank Accession No. AA	.739734	09/548,2	56
	AL	3	Database E	ST Id.: 2304	1763, GenBank Accession No. AI	191090	09/548,2	56
	AM	3	Database E	ST Id.: 2949	9724, GenBank Accession No. All	361123	09/548,2	56
	AN	3	Database LOCUS ATT22E16, Accession No. AL132975				09/548,256	
	АО	3	Database E	ST Id.: 4171	593, GenBank Accession No.: A	V442303	09/548,2	56
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		OTHER (Including Author, Title, Date, Pertinent Pages, etc.)	REFERENCE PROVIDED*
AA 4 Database EST Id.: 3548916, GenBank Accession No.: AW203676			
AB	4	Database EST Id.: 3592347, GenBank Accession No.: AW234714	09/548,256
AC	4	Database EST Id.: 3799016, GenBank Accession No.: AW396663	09/548,256
AD	4	Database EST Id.: 3925593, GenBank Accession No. AW506800	09/548,256
AE	4	Database EST Id.: 4003115, GenBank Accession No. AW570599	09/548,256
AF	4	Database EST Id.: 37082, GenBank Accession No. D23767	09/548,256
AG	4	Database EST Id.: 1446792, GenBank Accession No.: T44209	09/548,256
АН	4	Database EST Id.: 1448982, GenBank Accession No.: T45440	09/548,256
AI	4	Bouvier-Nave et al., "Identification of cDNAs Encoding Sterol Methyl-Transferases Involved in the Second Methylation Step of Plant Sterol Biosynthesis", Europ. J. Biochem., 246(2):518-519 (1997)	09/548,256
AJ	4	Broun and Somerville, "Progress in Plant Metabolic Engineering", PNAS, 98(16):8925-8927 (2001)	Submitted Herewith
AK	4	Caelles et al., "Isolation and Structural Characterization of a cDNA Encoding Aradidopsis Thaliana 3-hydroxy-3-Methylglytaryl Coenzyme A Reductase", Plant Mol. Biol., 13(6):627-638 (1989)	09/548,256

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10. 3	ATTY. DOCKET NO.	APPLICATION NO.	
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RADE	FILING DATE	GROUP	
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			OTHER (Including Author, Title, Date, Pertinent Pages, etc.)	REFERENCE PROVIDED		
	AA	5	Chappell et al., "Is the Reaction Catalyzed by 3-Hydroxy-3-methylglutaryl Coenzyme A Reductase a Rate-Limiting Step for Isoprenoid Biosynthesis in Plants?", Plant Physiology, US, American Society of Plant Physiologists, Rockville, MD, 109(4):1337-1343 (1995)			
	AB 5 Cho et al., "Introduction and Expression of the Streptomyces Cholesterol Oxidase Gene (ChoA), a Potential Insecticidal Protein Active Against Boll Weevil Larvae, Into Tobacco Cells", Appl. Micro. Biotech., 44(1-2):133-138(1995)					
	AC	5	Chye et al., "Characterization of cDNA and Genomic Clones Encoding 3-Hydroxy-3-Methylglutaryl-Coenzyme A Reductase from Hevea Brasiliensis", Plant Mol. Biol., 16(4):567-577 (1991)	09/548,256		
	AD	5	Corbin et al., "Cloning of an Insecticidal Cholesterol Oxidase Gene and Its Expression in Bacteria and in Plant Protoplasts", Appl. and Environ. Micro., 60(12):4239-4244 (1994)	09/548,256		
	AE	5	Corbin et al., "New Proteins for the Control of Insects in Transgenic Crops", HortScience, 34(4):699, No. 786 (1996)	09/548,256		
,	AF	5	Corbin et al., "The Identification and Development of Proteins for control of Insects in Genetically Modified Crops", HortScience, 33(4):614-617 (1998)	09/548,256		
A	٩G	5	d'Harlingue et al., "Plastid Enzymes of Terpenoid Biosynthesis", J. Biol. Chem., 260(28):15200-15203 (1985)	09/548,256		
A	ΑH	5	Dyas et al., "Steryl Fatty Acyl Esters in Plants", Phytochemistry, 34(1):17-29 (1993)	09/548,256		
4	ΑI	5	Estruch et al., "Transgenic Plants: An Emerging Approach to Pest Control", Nature Biotechnology, 15(2):137-141 (1997)	09/548,256		
	AJ	5	Falco et al., "Transgenic canola and soybean seeds with increased lysine", Bio-Technology, 13(6):577-582 (1995) (Abstract)			
A	AK 5 Fujioka <i>et al.</i> , "The Arabidopsis <i>deetiolated2</i> Mutant in Blocked Early in Brassinosteroid Biosynthesis", The Plant Cell, 9(11):1951-1962 (1997)			09/548,256		
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	AA	6	Fujishiro et al., "Isolation and Identification of the Gene of Cholesterol Oxidase from Brevibacterium Sterollicum ATCC 21387, a Widely Used Enzyme in Clinical Analysis", Biochem. and Biophy. Res. Comm., 172(2):721-727 (1990)	
	AB	6	Fuqua et al., "Characterization of melA: A Gene Encoding Melanin Biosynthesis from the Marine Bacterium Shewanella Colwelliana", Gene 109, 109(1):131-136 (1991)	09/548,256
	AC	6	Godoy-Hernandez et al., "Antisense Expression of hmg1 from Arabidopsis thaliana Enclding 3-hydroxy-3-methylglutaryl Coenzyme A Reductase, Reduces Isoprenoid Production in Transgenic Tobacco Plants", Journal of Plant Physiology, 153(3-4):415-424 (1998)	09/548,256
	AD	6	Gonzalez et al., "Overexpression of HMG-COA Reductase in Arabidoppsis Thaliana", Third Terpnet Meeting of the European Network on Plant Isoprenoids Abstracts, Abstract No. 33, page 33 (1997)	09/548,256
<u> </u>	AE	6	Guo et al., "Developmental Regulation of Sterol Biosynthesis in Zea Mays", Lipids, 30(3):203-219 (1995)	Submitted Herewith
	AF	6	Halliwell, "Antioxidants and Human Disease: A General Introduction", Nutrition Reviews, 55(1)(Part II):S44-52 (1997)	09/548,256
	AG	6	Husselstein et al., "Transformation of Saccharomyces cerevisiae with a cDNA encoding a Sterol C-methyltransferase from Aradidopsis Thaliana Results in the Synthesis of 24-ethyl Sterols", FEBS Letters, 381(1,2,26):87-92 (1996)	09/548,256
	АН	6	International Search Report from International Application No. PCT/US00/09696	Submitted Herewith
	AI	6	Jouanin et al., "Transgenic Plants for Insect Resistance", Plant Science, 131(1):1-11 (1998)	09/548,256
	AJ	6	Klahre et al., "The Arabidopsis DIMINUTO/DWARF1 Gene Encodes a Protein Involved in Steroid Synthesis", The Plant Cell, 10(10):1677-1690 (1998)	09/548,256
	AK	6	Kochhar, "Influence of Processing of Sterols of Edible Vegetable Oils", <u>Progress in Lipid Research</u> , 22:161-188 (1983)	09/548,256
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	AA	7	Li et al., "Conservation of Function Proc. Natl. Acad. Sci. USA, 94:35		nt Steroid 5 α-Reductases",	Submitted Herewith		
	AB	7	Ling et al., "Minireview Dietary P Effects", <u>Life Sciences</u> , 57(3):195		polism, Benefits and Side	09/548,256		
	AC	7		Long et al., "Fatty Acid Compositions of Lipid Fractions from Vegetable Cells and Mature Sorocarps of the Cellular Slime Mold Dictyostelim Discoideum", Chem. Abs., 87(5):213 (1977) (Abstract)				
	AD	7	Maimann et al., "Enhanced Cystat not Force Metabolite Flow Toward	Submitted Herewith				
	AE 7 Murooka et al., "Cloning and Expression of a Streptomyces Cholesterol Oxidase Gene in Streptomyces Lividans with Plasmid pIJ702", Appl. Environ. Microbiol., 52(6):1382-1385 (1986)					09/548,256		
	AF	7	Nawrath et al., "Targeting of the F Arabidoppsis Thaliana Results in Sci., 91(27):12760-12764 (1994)	09/548,256				
	AG	7	Padgette <i>et al.</i> , "Development, Ide Soybean Line", <u>Crop Science</u> , 35(09/548,256				
	АН	Ruzafa et al., "The Protein Encoded by the Shewanella Colwelliana melA Gene is a p- Hydroxyphenylpyruvate Dioxygenase", FEMS Micro Letters, 142/2:179-184 (1994)				09/548,256		
	AI	7	Schaller et al., "Expression of the Methylglutaryl-Coenzyme A Redu Physiol., 109:761-770 (1995)			09/548,256		
	AJ	7	Schaller et al., "Sterol Compositio Sam-Sterol-C24-Methyl-Transfera Plant Isoprenoids Abstracts, Abstr	ase", Third Terpnet Meeting of the		09/548,256		
	AK	7	Schaller et al., "Overexpression of Methyltransferase in Tobacco Mod Associated with Growth Reduction	difies the Ratio of 24-Methyl Ch	olesterol to Sitosterol and is	09/548,256		
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TRADE				FILING DATE	GROUP		
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	AA Seitz, "Stanol and Sterol Esters of Ferulic and p-Coumaric Acids in Wheat, Corn, Rye, and Triticale", J. Agri. and Food Chem., pp. 662-667 (1989)						
	AB	8	Shigeoka et al., "Isolation and Prop Gracilis", <u>Biochem. Biophys. Acta.</u>	perties of y-Tocopherol Methyltransfera: ., 1128(2/3):220-226 (1992)	se in Euglena	09/548,256	
	AC 8 Shintani et al., "Elevating the Vitamine E Content of Plants Through Metabolic Engineering", Science, 282(5396):2098-2100 (1998)						
	AD 8 Smith et al., "Cholesterol Oxidases: Properties and Applications", <u>J. Steroid Biochem.</u> , 7(9):705-713 (1976)						
	AE	8	Sucrow <i>et al.</i> , "Die Synthesis von α 5α-Stigmastan-3b-ol-und ihren 24-	09/548,256			
	AF	8	Vu et al., "Effects of Inhibitors on the Biosynthesis of Sterols Reducing Sugars and Chlorophyll and the Development of Iso Citrate Lyase in Germinating Seeds of Longleaf Pine Pinus-Palustris", Plant Sci. Let., 16:255-266 (1979) (Abstract)				
	AG	Withers et al., "Sterol Patterns of Cultured Zooxanthellae Isolated from Marine Invertebrates Synthesis of Gorgosterol and 23-Demethylgorgosterol by Aposymbiotic Algae", Proceedings of the National Academy of Sciences of the United States, 79(12):3764-3768 (1982)					
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	AI 8						
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	AK	8					
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